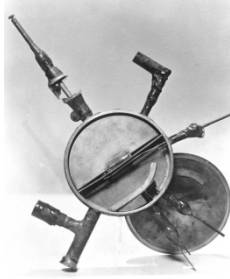


UC Research Contributions



Cyclotron

Ernest O. Lawrence, namesake of the Lawrence Berkeley National Laboratory, designed the first cyclotron, launching the scientific use of particle physics to discover the fundamental structure of matter. The cyclotron has had a major impact on the treatment of diseases, making it possible to create in large quantities the radioactive isotopes used in medical treatments.



Laser Diode

UCSB researchers, from the Solid State Lighting and Display Center in UCSB's College of Engineering, achieved lasing operation in nonpolar gallium nitride (GaN) semiconductors and demonstrated the world's first nonpolar blue-violet laser diodes. These new orientations of GaN will result in laser diodes with lower operating power and longer lifetimes, which are necessary for high-performance operation.



Planet hunt

UC Berkeley astronomer Geoff Marcy is a pioneer and leader in the discovery of planets beyond our own solar system. With the discovery of more than 200 exoplanets, Marcy's efforts to find and characterize their orbits and masses has led to a new understanding of the formation of planets and planetary systems.



Ground-fault interrupter

Charles Dalziel, a UC Berkeley professor of electrical engineering and computer sciences, invented a ground-fault interrupter, a device now found in virtually every home and building to protect people from electrical shocks caused by defects in appliances or grounding systems.



Insect control

UC Berkeley Professor Edward Steinhaus, a pioneer in the field of insect pathology, used bacteria to attack a caterpillar that infests alfalfa. This was the first successful use of an insect pathogen to control insects in the field. Today these bacteria, *Bacillus thuringiensis*, are used worldwide to fight crop disease

UC Statewide IPM Project
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UC Research Contributions



Dairy

Better sanitation procedures, improvements in raw milk handling and quality, and innovations that have reduced the environmental impact of livestock waste have contributed to making California the nation's largest dairy state. The J-5 vaccine alone, developed in 1988 by veterinary medicine faculty to prevent mastitis in dairy cattle, saves producers \$11 million every year.



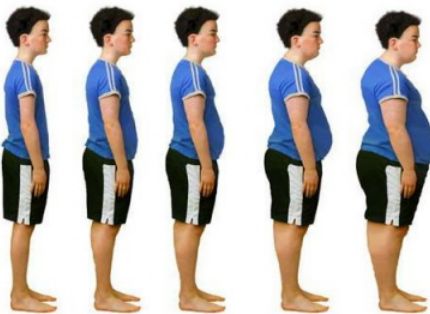
Baby Sign Language

UC Davis research gave birth in the 1980s to "baby sign language," a then-revolutionary way to communicate with infants. Ongoing studies by UC Davis psychology professor Linda Acredolo have demonstrated that children who sign as babies have higher IQs at age 7 and 8 than those who don't.



Diabetes

UCSF scientists isolated the gene for insulin, leading to the mass production of genetically engineered insulin to treat diabetes.



Childhood Obesity

Researchers at the UCSF Children's Hospital concluded that a key reason for the epidemic of pediatric obesity, now the most commonly diagnosed childhood ailment, is that high-calorie, low-fiber Western diets promote hormonal imbalances that encourage children to overeat.



Sustainable Fisheries

A winter-rearing program for winter-run Chinook salmon has helped keep the species alive. That is one of the achievements of UC Davis' Bodega Marine Laboratory, which performs crucial studies of ocean ecosystem problems, including abalone losses, the "ecosystem services" of sea grasses, marine upwelling and coastal climate change.

UC Research Contributions



Cleaner smokestacks

Frederick G. Cottrell, UC Berkeley professor of chemistry, developed an electrical precipitation device to clean smokestack emissions; it is still in use today.



DDT warning

In the 1960's wildlife biologist Daniel Anderson was one of the first scientists to recognize how pesticides like DDT were linked to eggshell thinning and population declines in pelicans and cormorants. His work as a UC Davis faculty member from the 1970s to the present has continued to add to the understanding of environmental and human impacts on seabird populations — research that has been instrumental in the creation of ecological reserves in California and Baja California.



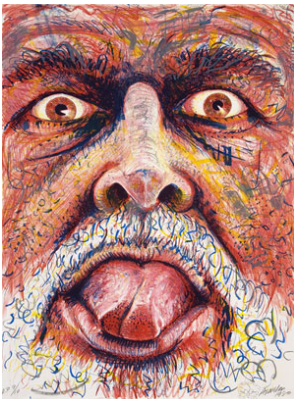
Oil Spills and Wildlife

When an oil spill spreads over the surface of the ocean endangering birds and other small mammals, rescuers spring into action, thanks to a formidable network led by UC Davis wildlife veterinarians in conjunction with the California Department of Fish and Game. Injured animals are cleaned and rehabilitated at a dozen facilities stretching along the entire 1,100 miles of California's coast.



State water Project

Engineering work at UC Davis played a big part in the design of the 444-mile-long California Aqueduct and other elements of the State Water Project that today serves 23 million Californians and 755,000 acres of farmland. Jaime Amorochó and others built water project models in a laboratory that now bears his name and that is used today by scientists designing river pumps and other diversion works that are safer for fish like the endangered delta smelt.



California Funk

Five great artists who came to teach at UC Davis in the early 1960s collectively launched the influential "California funk" art movement. With irreverence and wit, Robert Arneson, Roy De Forest, Manuel Neri, Wayne Thiebaud and William T. Wiley challenged the pretensions of the East Coast art world, charted a new course for a generation of artists and catapulted the UC Davis art department to prominence.

UC Research Contributions



No-fault Divorce

Herma Hill Kay, a UC Berkeley faculty member at Boalt Hall, co-drafted California's 1970 no-fault divorce law, the first of its kind in the nation. The law eliminated the need to place blame on a spouse for a failed marriage and makes "irreconcilable differences" sufficient ground for divorce.



Baseball

San Francisco's AT&T Park baseball stadium is less windy for fans and fly balls thanks to wind tunnel tests performed by UC Davis engineers on a model of the park before construction began. As a result, the final stadium was turned 90 degrees from the initial design to avoid wind problems.